

I/WE CLAIM:

1. An off the road vehicle comprising:
 - a frame;
 - 5 an engine operatively supported by said frame;
 - at least a first ground engaging drive wheel operatively supported by said frame;
 - a drive system for use in selectively driving said as least first ground engaging drive wheel, said drive system being operatively connected to said engine; said drive system
 - 10 including an adjustable member; and,
 - an electronic control system comprising:
 - (1) an operator actuated activating means;
 - (2) a shift control mechanism that selectively receives an input from said activating means and selectively sends a corresponding output; and,
 - 15 (3) an actuator operatively connected to said shift control mechanism and operatively connected to said adjustable member; said actuator receiving said output from said shift control mechanism and adjusting said adjustable member as a result.
2. The off the road vehicle of claim 1 wherein:
 - 20 said drive system further comprises a transmission and said adjustable member is operatively connected to said transmission and is used to adjust the direction of travel for the off the road vehicle;
 - said operator actuated activating means comprises first and second devices selectively sending corresponding first and second inputs to said shift control mechanism,
 - 25 said shift control mechanism sending corresponding first and second outputs; and,
 - said actuator causing said adjustable member to move to a first position upon receipt of said first output wherein said first position of said adjustable member causes the at least first ground engaging drive wheel to rotate in a clockwise direction, said actuator causing said adjustable member to move to a second position upon receipt of said second

output wherein said second position of said adjustable member causes the at least first ground engaging drive wheel to rotate in a counterclockwise direction.

3. The off the road vehicle of claim 1 wherein:

5 said engine includes an intake manifold and said actuator is a vacuum actuator that receives vacuum from said intake manifold;

 said operator actuated activating means comprises a third device selectively sending a corresponding third input to said shift control mechanism, said shift control mechanism sending a corresponding third output;

10 said electronic control system further comprises a sensor that senses when the adjustable member is in said third position and sends a corresponding fourth input to said shift control mechanism, said shift control mechanism sending a corresponding fourth output;

 said actuator causing said adjustable member to move to a third position upon receipt of said third and fourth outputs wherein said third position of said adjustable member
15 causes said at least first ground engaging drive wheel to enter a neutral condition; and,

 said shift control mechanism repeatedly sending fourth output to said actuator causing said adjustable member to remain in said third position thereby causing said at least first ground engaging drive wheel to remain in said neutral condition.

20 4. The off the road vehicle of claim 1 wherein:

 said engine includes an intake manifold and said actuator is a vacuum actuator that receives vacuum from said intake manifold;

 said drive system further comprises a cruise control system operatively connected to said adjustable member;

25 said operator actuated activating means comprises a first device selectively sending a corresponding first input to said shift control mechanism, said shift control mechanism sending a corresponding first output; and,

said actuator causing said adjustable member to move to a first position upon receipt of said first output wherein said adjustable member is maintained in its current position.

- 5 5. An electronic control system adapted for use on an off road vehicle including, a frame, an engine, drive wheels, and driven wheels comprising:
- a shift control mechanism comprising:
- (1) an operator actuated activating means;
- (2) an electronic control system that selectively receives an input from
- 10 said activating means and selectively sends a corresponding output; and,
- (3) an actuator operatively connected to said shift control mechanism and operatively connected to a drive system; said actuator receiving said output from said shift control mechanism and adjusting said drive system as a result.
- 15 6. The electronic control system of claim 5 wherein:
- said drive system further comprises a transmission and an adjustable member wherein said adjustable member is operatively connected to said transmission and is used to adjust the direction of travel for the off road vehicle;
- said operator actuated activating means comprises first and second devices
- 20 selectively sending corresponding first and second inputs to said shift control mechanism, said shift control mechanism sending corresponding first and second outputs; and,
- said actuator causing said adjustable member to move to a first position upon receipt of said first output wherein said first position of said adjustable member causes the associated vehicle to move in a first direction, said actuator causing said adjustable member
- 25 to move to a second position upon receipt of said second output wherein said second position of said adjustable member causes the associated vehicle to move in a second direction.
7. The electronic control system of claim 5 wherein:

said operator actuated activating means comprises a third device selectively sending a corresponding third input to said shift control mechanism, said shift control mechanism sending a corresponding third output;

the electronic control system further comprises a sensor that senses when the adjustable member is in said third position and sends a corresponding fourth input to said shift control mechanism, said shift control mechanism sending a corresponding fourth output; and,

said actuator causing said adjustable member to move to a third position upon receipt of said third and fourth outputs wherein said third position of said adjustable member causes the associated vehicle to enter a neutral condition.

8. The electronic control system of claim 5 wherein:

said drive system further comprises a cruise control system operatively connected to said adjustable member;

said operator actuated activating means comprises a first device selectively sending a corresponding first input to said shift control mechanism, said shift control mechanism sending a corresponding first output; and,

said actuator causing said adjustable member to move to a first position upon receipt of said first output wherein said adjustable member is maintained in its current position.

9. A method of shifting the direction of an off road vehicle comprising the steps of:

providing a frame, an engine operatively supported by said frame, at least a first ground engaging drive wheel operatively supported by said frame; a drive system including a transmission and an adjustable member for use in selectively driving said at least first ground engaging drive wheel; an electronic control system comprising; (1) an operator actuated activating means, (2) a shift control mechanism, and (3) an actuator;

activating an activating means;

sending a corresponding input to said shift control mechanism;
sending a corresponding output to said actuator;
moving said adjustable member to a first position;
shifting said transmission; and,
5 rotating said first ground engaging wheel in a clockwise direction.

10. The method of claim 9 further comprising the steps of:
activating an activating means;
sending a corresponding input to said shift control mechanism;
10 sending a corresponding output to said actuator;
moving said adjustable member to a second position;
shifting said transmission; and,
rotating said first ground engaging wheel in a counterclockwise direction.

- 15 11. The method of claim 9 further comprising the steps of:
providing said electronic control system with a sensor that senses when the
adjustable member is in a third position;
wherein simultaneously with the step of moving said adjustable member to
first position said method further comprises the step of:
20 sensing a neutral condition;
sending a corresponding input to said shift control mechanism;
sending a corresponding output to said actuator;
moving said adjustable member to a third position; and,
causing said at least first ground engaging wheel to enter a neutral condition.

- 25 12. The method of claim 9 further comprising the steps of:
providing said drive system with a cruise control system having a cruise
member;
activating an activating means;

sending a corresponding input to said shift control mechanism;
sending a corresponding output to said actuator;
moving said adjustable member to a first position; and,
maintaining said adjustable member in said first position.